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10 July 2008

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Dear Dr Davison

Ofsted 2007-08 survey inspection programme - mathematics and planning for change: the impact of the new Key Stage 3 curriculum

Thank you for your hospitality and co-operation, and that of your staff, during my visit with my colleague Asyia Kazmi HMI on 30 June and 1 July 2008 to look at work in mathematics and in planning for the implementation of the new Key Stage 3 curriculum.

As outlined in our initial letter, as well as looking at key areas of the subject, the visit had a particular focus on the effectiveness of the school's approaches to improving the quality of teaching and learning in mathematics. Asyia Kazmi focused in particular on the work done in planning for the implementation of the new curriculum for Year 7 students from September 2008.

The visit provided valuable information which will contribute to our national evaluation and reporting. Published reports are likely to list the names of the contributing institutions but individual institutions will not be identified in the main text. All feedback letters will be published on the Ofsted website at the end of each half-term.

The evidence used to inform the judgements made included interviews with staff and students, scrutiny of relevant documentation, analysis of students' work and observation of lessons.

The overall effectiveness of the subject, mathematics, was judged to be good, with some outstanding features.

Achievement and standards

Achievement in mathematics is outstanding. Standards are very high.

- Students arrive at this partially selective school with standards which, overall, are well above average. Standards attained at GCSE and in National Curriculum tests are high. In 2007, over four fifths of students attained at least Level 7 by the end of Year 9, half of these at Level 8, and over three fifths attained grades A* or A

at GCSE. Whilst progress by the end of Year 9 is broadly in line with expectations given students' prior attainment, it is at least good by the end of Year 11.

- Achievement post-16 is outstanding, particularly at AS level, where, in 2007, 93% attained grades A or B. In the same year, over three quarters attained these grades at A level, as did all ten students entered for further mathematics. Large numbers opt to study mathematics post-16, with almost all completing A level and significant numbers going on to study it or related subjects at university.
- Achievement is outstanding not just because of high standards, but also because of students' attitudes towards the subject, especially in the sixth form. Most students enjoy mathematics and develop confidence. One said, 'I've always liked it,' whilst another, 'I didn't really want to take it, but I want to study medicine. It's now my favourite subject.' Students enter national and local competitions, such as the UK Mathematics Challenge, in large numbers and achieve significant success.

Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is good.

- All the mathematics teachers are specialists, with an enthusiasm for the subject. Most have significant experience and all are very effective in preparing students for examinations. As one student said, 'I went into the exam feeling very confident' and another, 'It's my easiest A level because the teachers build it up steadily each week.' Teachers use skilful questioning to check students' understanding and place a good emphasis on them explaining their reasoning.
- There is some outstanding teaching, with teachers adopting an investigative approach, encouraging discussion and using a variety of activities within a lesson. For example, a Year 10 class investigated the angle properties of circles in pairs, were quickly taken through a computer generated presentation and then used their findings to solve problems. The class were provided with laptop computers and were encouraged to consider how they would prove the circle theorems. However, although the proforma for lesson planning encourages teachers to use a range of learning styles, not all do so. Some lessons are over teacher-directed and discussion is discouraged. Here, as one student said, 'You lose concentration from being so bored.'
- The introduction of computer-generated whiteboards in a new suite of rooms has enhanced the use of information and communication technology (ICT) significantly over the last year. Students appreciate the way, as one said, 'they have made lessons more interactive.' Good use is made of mathematics websites and graph-plotting software. However, teachers' confidence in using technology effectively varies and students in some year groups indicate that their use of ICT has been limited.
- Assessment procedures are good. Very regular homework is set and progress is tracked carefully. All teachers have received training to improve the use of assessment, but as yet self and peer-assessment by students is not embedded sufficiently. The quality of teachers' marking is variable, with some giving insufficient guidance to students on what to do to improve.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- There are some good schemes of work, particularly for Years 7 to 9, with appropriate references to the use of ICT and the applications of mathematics. Students of all ages undertake investigative activities and have been very well prepared for GCSE coursework. However, the use of ICT to help students appreciate the applications of the mathematics has yet to be developed fully. As one student said, 'sometimes examples in textbooks just pretend to be relevant.' Sixth-form students indicated that one reason for not reading mathematics at university was that they did not know what careers it could lead to.
- Excellent provision is made for the many gifted and talented students through entry for various mathematics challenges and competitions. This is used effectively to deepen the curriculum for the ablest. However, some students indicated that in Years 7 to 11 the course was too focused on the examination syllabuses and felt that 'it would be more interesting' if the approach of competitions, such as the UK Mathematics Challenge, was adopted across more lessons.
- The breadth of the curriculum post-16 is outstanding. Students appreciate the way teachers use their subject expertise to extend the work on some topics beyond that in the specification. They also recognise that sitting all AS-level units at the end of Year 12 significantly enhances their understanding and, therefore, their performance at this level.

Leadership and management of mathematics

The leadership and management of mathematics are good.

- The department is very well led by an experienced teacher whose love of mathematics and involvement in national competitions has helped ensure the popularity of the subject. He is supported by a skilled team of mathematics teachers. All have responsibilities within the department, but for some these are administrative tasks. Thus, some experienced teachers take insufficient responsibility for supporting the development of the quality of teaching and learning across the department.
- Management of the department is good and coped effectively with the absence of some experienced teachers for part of the last year, movement to a new suite of rooms during this year, and planning for next year when there will be a new leadership team.
- Departmental self-evaluation is rigorous and includes thorough analyses of examination results. Tracking of students' progress is also thorough.
- You, and other senior leaders, have a good understanding of the strengths of the department. In reviewing the department a year ago, good use was made of students' views. The department recognises that it has yet to adopt an effective curriculum for lower attaining students in order to move some, who currently attain Grade D at GCSE, to Grade C or higher.

Leadership and management: planning for implementation of the new Key Stage 3 curriculum

The planning for the implementation of the new Key stage 3 curriculum is outstanding.

- Senior leaders have very effectively planned the implementation of the new curriculum in a manner which has enthused and motivated staff. It has been included in the school improvement plan and is linked cohesively to developing teaching and learning and the student voice.
- Very thorough monitoring processes enable senior leaders to provide support and training where it is needed and consider the impact of the changes on students' enjoyment and achievement.
- Subject leaders have very good understanding of the demands of the new curriculum. They have undertaken a gap analysis that maps where existing resources and plans can be used, and where new resources are needed. They feel very well supported by both external and in-house training.
- Personal, learning and thinking skills have been incorporated explicitly into schemes of work. Opportunities for cross-curricular collaboration have been identified and planned for.

Subject issue: the effectiveness of the school's approaches to improving the quality of teaching and learning in mathematics

- The school's emphasis on improving the quality of students' learning across all subjects has had a positive impact on the teaching of mathematics. Training has been given on different thinking and learning styles and the use of assessment to improve learning. Teachers' plans make appropriate reference, for example, to kinaesthetic learning and students have a good understanding of the different ways they learn.
- Provision of a new suite of rooms with computer-linked whiteboards and sets of laptop computers has supported teachers in adopting a more interactive approach to teaching which students appreciate. Sharing of good practice across the department is effective, but, as departmental leaders indicate, there is more to be done to ensure 'students have a thorough grasp of a topic rather than just covering what is in the syllabus.'

Areas for improvement in mathematics, which we discussed, included:

- further encourage all teachers to adopt strategies that develop students' different ways of thinking and learning through problem solving, discussion, collaboration and the use of ICT.

I hope these observations are useful as you continue to develop mathematics in the school.

As explained in our previous letter, a copy of this letter will be sent to your local authority and will be published on the Ofsted website. It will also be available to the team for your next institutional inspection.

Yours sincerely

David Bain
Additional Inspector